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N

PORTABLE MEASURING INSTRUMENTS

Precision ammeter and voltmeter

Three phase wattmeter

Single phase power factor meter

Cycle counter

High resistance tester

中國儀器進口公司

CHINA NATIONAL INSTRUMENTS IMPORT CORPORATION

IMPORTERS & EXPORTERS

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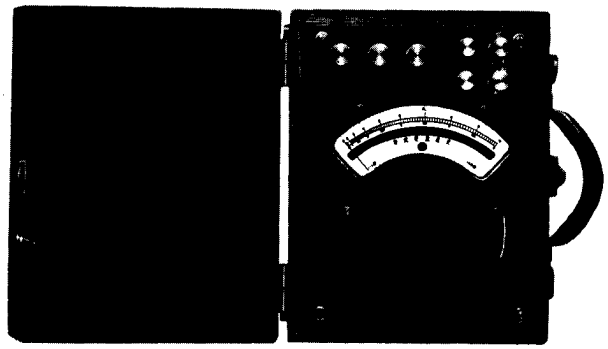
PORTABLE PRECISION TYPE AC/DC AMMETERS AND VOLTMETERS

Type TH-AVM



Type TH-AVM Ammeter and Voltmeter are electrodynamometer type instruments, for precision measurements of current and voltage of AC/DC circuits. The main parts of the instruments comprise of a pair of stationary coils, a movable coil, an aluminium shaft with its hardened steel pivots being supported by jewel bearings, phospher-bronze springs and air damping device.

The case is made of teak wood.

Features:

1) The knife-edged pointer and mirror scale ensure accurate reading free from error due to parallax.
2) Being equipped with air damping device and phospher-bronze springs, the pointer is able to move smoothly and steadily when the load changes suddenly.
3) The meters are effectively shielded to avoid the influence of stray fields.

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SPECIFICATIONS

Accuracy ..... ±0.5%
Effective Range of Scale 20–100%
Length of Scale ..... 133 mm.
Net Weight ..... 5 Kg.
Dimensions ..... 264 × 216 × 158 mm.

AC/DC Ammeters:

Ranges	Scale Divisions	Cat. No.	Ranges	Scale Divisions	Cat. No.
0—0.5 A	100	STH 1001	0—0.5—1 A	100	STH 1008
0—1 A	100	STH 1002	0—2.5—5 A	100	STH 1009
0—2.5 A	100	STH 1003	0—5—10 A	100	STH 1010
0—5 A	100	STH 1004	0—10—20 A	100	STH 1011
0—10 A	100	STH 1005			
0—15 A	150	STH 1006			
0—20 A	100	STH 1007			

AC/DC Voltmeters:

Ranges	Divisions of Scale	Cat. No.	Ranges	Divisions of Scale	Cat. No.
0—150 V.	150	STH 1101	0—300—600 V.	120	STH 1107
0—300 V.	150	STH 1102	0—150—300—450 V.	150	STH 1108
0—75—150 V.	150	STH 1103	0—125—250—500 V.	100	STH 1109
0—125—250 V.	125	STH 1104	0—150—300—600 V.	150	STH 1110
0—150—300 V.	150	STH 1105			
0—250—500 V.	100	STH 1106			

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THREE PHASE WATTMETER

Portable Type TH-WM

SPECIFICATIONS

Accuracy	±1%
Effective Range of Scale	20–100%
Length of Scale	133 mm.
Net Weight	5 kg.
Dimensions	264 × 241 × 191 mm.

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Rated Voltage	Rated Current		Full Scale		Scale Subdivision	Watt per division	Cat. No.
50—100 V.	1 Amp.	2 Amp.	100—200 w.	200—400 w.	100	1—2—4 w.	STH 1201
	2.5 Amp.	5 Amp.	250—500 w.	500–1000 w.	100	2.5—5—10 w.	STH 1202
	5 Amp.	10 Amp.	0.5—1000 w.	1—2000 w.	100	5—10—20 w.	STH 1203
	10 Amp.	20 Amp.	1—2000 w.	1—4000 w.	100	10—20—40 w.	STH 1204
75—150 V.	1 Amp.	2 Amp.	150—300 w.	300—600 w.	150	1—2—4 w.	STH 1205
	2.5 Amp.	5 Amp.	375—375 w.	750–1500 w.	150	2.5—5—10 w.	STH 1206
	5 Amp.	10 Amp.	0.75–1.5000w.	1.5—3000 w.	150	5—10—20 w.	STH 1207
	10 Amp.	20 Amp.	2—3000 w.	4—8000 w.	160	1.25—2.5—5 w.	STH 1208
100—200 V.	1 Amp.	2 Amp.	200—400 w.	400—800 w.	160	1.25—2.5—5 w.	STH 1209
	2.5 Amp.	5 Amp.	0.5—1000 w.	1—2000 w.	100	5—10—20 w.	STH 1210
	5 Amp.	10 Amp.	1—2000 w.	2—4000 w.	100	10—20—40 w.	STH 1211
	10 Amp.	20 Amp.	2—4000 w.	4—8000 w.	160	12.5—25—50 w.	STH 1212
150—300 V.	1 Amp.	2 Amp.	300—600 w.	600–1200 w.	120	2.5—5—10 w.	STH 1213
	2.5 Amp.	5 Amp.	0.75–1.5000w.	1.5—3000 w.	150	5—10—20 w.	STH 1214
	5 Amp.	10 Amp.	1.5—3000 w.	3—6000 w.	150	10—20—40 w.	STH 1215
	10 Amp.	20 Amp.	3—6000 w.	6–12000 w.	120	25—50—100 w.	STH 1216
250—500 V.	1 Amp.	2 Amp.	500–1000 w.	1000–2000 w.	100	5—10—20 w.	STH 1217
	2.5 Amp.	5 Amp.	1.25–2.5000w.	2.5—5000 w.	100	12.5—25—50 w.	STH 1218
	5 Amp.	10 Amp.	2.5—5000 w.	5–10000 w.	100	25—50—100 w.	STH 1219
	10 Amp.	20 Amp.	5–10000 w.	10–20000 w.	100	50—100—200 w.	STH 1220
300—600 V.	1 Amp.	2 Amp.	0.6–1.2000w.	1.2–2.4000w.	120	5—10—20 w.	STH 1221
	2.5 Amp.	5 Amp.	1.5—3000 w.	3—6000 w.	150	10—20—40 w.	STH 1222
	5 Amp.	10 Amp.	3—6000 w.	6–12000 w.	120	25—50—100 w.	STH 1223
	10 Amp.	20 Amp.	6–12000 w.	12–24000 w.	120	50—100—200 w.	STH 1224

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General Description:

Type TH-WM Three Phase Wattmeter is also an electrodynamometer type instrument. Two single phase wattmeters are mounted on a common shaft, thus the deflection and reading of this meter will be the total vector sum of two separate meters.

This instrument has two sets of stationary coils, two movable coils installed on an aluminium shaft rotating inside the stationary coils, a highly polished and hardened steel pivot resting inside jewel bearings, air damping device, and mirror scale with knife-edged pointer.

Features:

1) Mica insulators are placed between the springs to prevent short circuit.
2) The meter is also effectively shielded to protect the accuracy from being affected by stray fields.

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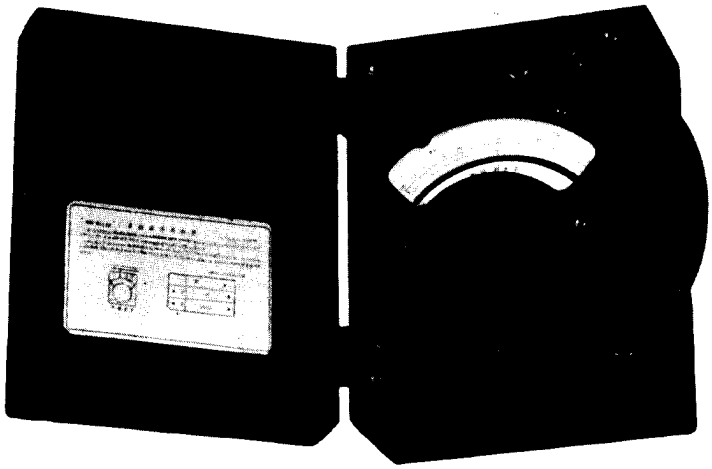
SINGLE PHASE POWER FACTOR METER

Portable Type TH-PFM



SPECIFICATIONS

Accuracy ..... Cos. 1°
Effective Range of Scale 0–100%
Length of Scale ..... 133 mm.
Net Weight ..... 4.5 kg.
Dimensions ..... 201 × 261 × 147 mm.

Rated Current	Rated Voltage	Scale	Full Scale Divisions	Cat. No.
5 Amp.	110 V.	0.5—1—0.5	100	STH 1301
5 Amp.	150 V.	0.5—1—0.5	100	STH 1302
5 Amp.	300 V.	0.5—1—0.5	100	STH 1303
2.5 — 5 Amp.	100—200 V.	0.5—1—0.5	100	STH 1304
2.5 — 5 Amp.	125—250 V.	0.5—1—0.5	100	STH 1305
2.5 — 5 Amp.	150—300 V.	0.5—1—0.5	100	STH 1306
5 — 10 Amp.	100—200 V.	0—1	100	STH 1307
5 Amp.	200 V.	0—1	100	STH 1308
10 Amp.	100 V.	0—1	100	STH 1309

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General Description:

Type TH-PFM Single Phase Power Factor Meter is also an electrodynamometer type instrument, and the main parts of the instrument comprise of:

1) A pair of stationary current coils;
2) A movable voltage coil made of fine wires mounted on an aluminium shaft placed inside the stationary coils;
3) A highly polished and hardened steel pivot connected to the aluminium shaft and resting inside jewel bearings;
4) Anti-parallax mirror scale with knife-edged pointer.
5) An air damping device.

It is used to determine the phase angle between the voltage and the current (whether the current is leading or lagging) in single phase 50 cycles AC circuit.

The case is made of teak wood.

Features:

1) The springs of the movable coils are made of very fine and soft material which render the restoring torques negligible.
2) Mica insulations are placed between the springs to prevent short circuit.
3) The instrument is also effectively shielded to avoid the influence of stray fields.

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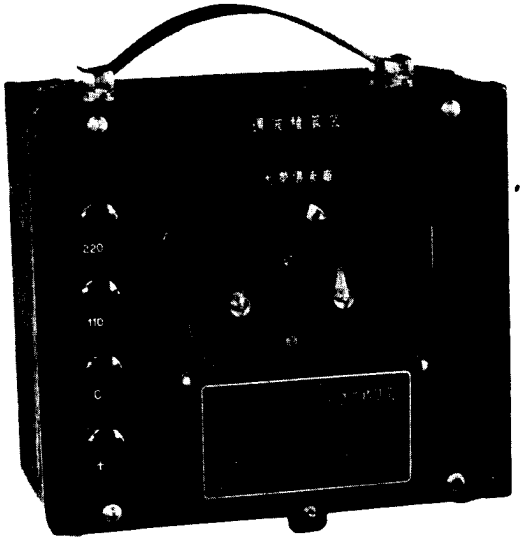
CYCLE COUNTER

Portable Type TH-CC



SPECIFICATIONS

Rated Voltage: 110–220 volts (the instrument can maintain its accuracy at 65% of rated voltage).

Used for 25 to 60 cycles.

Cat. No. STH 1401.

Net Weight: 2 kg.

Dimensions: 175 × 155 × 100 mm.

Application:

To measure the time limit of induction relays.

Description:

The cycle counter is a vibration instrument. Its main parts include a toothed wheel and a ratchet, a horse shoe permanent magnet, a pair of coils, a spring and a resistor.

The instrument is contained in a teak wood case with bakelite front cover.

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HIGH RESISTANCE TESTER (MEGOHMMETER)

Portable Type TH-MT

SPECIFICATIONS

Measuring Ranges	0–20–200 Megohms
Voltage	500 V.
Cat. No.	STH 1501
Net Weight	6 kg.
Dimensions	255 × 210 × 205 mm.

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Description:

Type TH-MT High Resistance Tester is equipped with a vibrator connected to two large size 1.5 volt dry cells in series. The purpose of the vibrator is to supply the source of high voltage for operating the instrument.

Application:

This instrument is used to measure high resistance in electric circuit and to determine the insulation of coils and other electric installations.

Directions for Use:

1) Two connecting wires are furnished with the meter. Insert these two wires into the two sockets on the surface of the tester. Connect the free terminals of the two wires together. Press down the Push Button (marked "press and read") and adjust the pointer until it sets on zero. Now release the terminals, and then connect them across the circuit to be measured. The reading in megohms is now directly indicated in the scale.
2) The Push Button can be kept down at reading position by pressing it down and turning it over. After reading, turn it back and it will spring up automatically.
3) The range selection switch has two positions—one for 0–20 megohms and the other one for 0–200 megohms.
4) The circuit should be cut-off while testing.
5) When changing the dry cells, the terminals should be connected same as before.

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